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Telecom

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The sources said the privatisation process of the T&T Board would start with the establishment of private commercial telephone exchanges in Dhaka, Chittagong and a few other sprawling towns of the country. These exchanges will be connected to the national network.

In the final stage of the process, the T&T Board will be floated as a public company.

The corporation has floated a new company Optel Telecommunications Ltd., for establishment of the project, which has been completed in a record time of 15 months without any cost overrun.

The emphasis in the eighth plan telecom expansion is on increased accessibility and reliability of communication services, reliability of service, enhanced rural connectivity and more extensive subscriber base.

Introduction of new services, enhanced focus on rural areas, and improved service quality.

[Text] Telephone subscribers will international digital trunk exchange work facilities through the latest from the middle of 1991, reports

The Cable and Wireless Company entrusted with the task of setting this regard under the agreement Tuesday [with] Bangladesh Telegraph and Telephone Board at a cost of one crore

The chairman of the T and T Board Khan and Regional Marketing Manager Cable and Wireless Company Kitson, signed the agreement of parties.

Vice-President Moudud Ahmed, Minister Kazi Firoz Rashid and Communication Secretary A. H. M. Shah the signing ceremony.

Briefing newsmen the Vice-President as a historic day in the field telecommunication network in the

He appreciated the efforts of the modernising the telecommunication

Kazi Firoz Rashid said under the agreement between the T and T Wireless Company of England, a company set up to undertake the task, 51 shares will be owned by the Bangladesh while the rest 49 percent will be owned by Wireless Company of England.

Out of the estimated cost of one crore dollars, the Cable and Wireless Company contribute 80 lakh U.S. dollars in the Bangladesh Government will provide the rest 20 lakh dollars in the form of land and license.

Out of the seven directors of the company, four directors will be from Bangladesh and the Cable and Wireless Company will be represented by three directors.

The Post and Telecommunication Minister said that of the total profit from the trunk exchange and pay-phone network, the Bangladesh Government would get 40 percent profit would be distributed between the T and T Board and the Cable and Wireless Company at the ratio of 51 percent

He hoped that the present income from telephone call head of Taka 40 crore

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Noted journalist Mr Khushwant Singh expressed the hope that the bill would bring functional autonomy to the professionals in the electronic media, who were an excellent lot but were not allowed to express themselves.

Telecom Panel Surrenders Modernization Loan

55500035A Madras *THE HINDU in English* 16 Dec 89 p 11

[Text] New Delhi, Dec 15—The Telecom Commission has surrendered nearly \$200 millions (Rs 335 crores) out of a \$463-million (Rs 780 crores) loan committed by the World Bank and the Asian Development Bank for modernisation of the Indian telecommunication network following its decision to either use indigenous technology or postpone some of the projects not required immediately.

The decision was taken after a review of domestic capabilities and also postponing the move to have new facilities like the Packet Switch Data Network titled, Vikram, and installation of a number of small earth stations. Early this week it was decided to surrender as much as \$64 millions out of the ADB's committed assistance of \$135 millions (first telecom project loan) for computerisation of trunk manual exchanges in Delhi, Madras, Calcutta, Bombay, Pune, Hyderabad, Bangalore and Ahmedabad. It would now be done with indigenous technology.

According to informed sources, the commission would shortly write to the Department of Economic Affairs in the Finance Ministry asking it to convey decision to the two multilateral funding institutions. It was not that the commission did not want to utilise the loan but the decision was more due to rejection by the World Bank and the ADB of the Indian request for using the aid for importing components which were not scheduled originally.

In recent discussions with the World Bank, the commission was informed that it would not be possible to accede to its request. Instead, the Bank suggested that the commission use alternative credit lines available for importing components and if it still felt the need for World Bank assistance, it would have to make an altogether new proposal. Even the ADB has taken a similar stand.

The commission has, therefore, now more or less made up its mind to explore other avenues of credit. The casualty in the process is its decision to set up a components bank, though the move was already aborted by the Industry Ministry in September last.

The originally agreed to World Bank loan of \$348 millions was cut by \$17 millions because of 'misprocurement' of certain items by the Department of Telecommunications much before the commission came into being. The commission faced similar prospects in procurement of some other items which ultimately compelled it to decide against using part of the loan.

The projects deleted from the World Bank funding include the Vikram network, Automatic message and accounting system and small earth stations. Even in respect of jelly-filled cables the decision was to drop the project from the list but since the letters of credit had been opened, the first lot had to be imported. In the second round, some Indian parties had won the contract and the commission therefore agreed to retain it in the list for Bank funding, the sources said. Overall, the World Bank loan is likely to be utilised by February 1990 and the extent of surrender is expected to be nearly \$135 millions.

The surrender of the ADB loan of \$135 millions for the first telecom project is \$64 millions. Incidentally, the ADB also approved a \$118-million loan for the second telecom project in February 1989 mainly to assist the public sector Hindustan Cables in production of polyethylene-insulated jelly-filled cables.

Under the first loan, the ADB was to assist in modernisation of manual trunk exchanges in eight cities with provision of computerised digital equipment and automated operator positions. After approval from the Bank, the Department of Telecommunications floated a global tender for computerisation of trunk manual exchanges and ultimately the competition narrowed between Fujitsu and the NEC, both from Japan. A decision was 'nearly' taken in favour of Fujitsu when the NEC raised objections because of certain changes in technical specifications. The matter appears closed now as the commission has decided not to utilise the loan for the proposed project.

While the international gateway switches for Delhi, Bombay, Calcutta and Madras were being imported with ADB loan, the commission may not use the ADB aid for improving domestic satellite facilities.

Maritime Telex Service for Bombay Commissioned

55500016 Bombay *THE TIMES OF INDIA in English* 19 Oct 89 p 5

[Text] Bombay, 18 October—A maritime telex service using the Narrow Band Direct Printing (NBDP) System was commissioned today at the Central Telegraph Office here, with Mr S.G. Watwe, chief general manager, Maharashtra Telecom Circle making a call to M.V. Tamilanna sailing 1,670 km off Bombay coast.

The service can be used for contacting ships located up to a distance of about 10,000 km from the Bombay coast stations on telex by any of the telex subscribers situated either inland or abroad.

Mr Watwe said the telex subscriber intending to make a telex call to a CTO Bombay by dialling Telex No. 011-76041 and convey his requirements to the operator. The operator would establish communication with the ship by high frequency signals and connect the ship to the landline subscriber.

The signals are exchanged through ARQ—automatic request for repetition—process which enables error free exchange of data between the ship and the controlling station. Facilities are also available for storage of messages and transmitting them to the ship at a later time.

Similarly, the incoming messages from the ship can also be stored at the controlling station in CTO Bombay for onward transmission to the telex subscriber afterwards.

The Bombay station is assigned a unique selective call code No. 2301. This number identified the called station.

Mr R. Srinivasan, chief general manager, Telecom, maintenance, Bombay, who presided, said his organisation is fully geared to maintain in a fault free condition round the clock.

Dr C.K. Sane, chief general manager, Telecom, projects, Bombay said the service is being introduced on a semi-automatic basis to afford easy connection of telex calls to the subscribers who were not well versed with the operation of maritime communication systems.

Telecom Official Tells Plans for Eastern Region

55500017 Calcutta *THE TELEGRAPH in English* 20 Oct 89 p 6

[Text] Calcutta, 19 October—The telecommunications commission has identified 120 growth centres, including Calcutta, for special thrust during the Eighth Plan, according to Mr Sam Pitroda, the chairman.

Participating in a question-answer session with the members of the Calcutta Chamber of Commerce here today, Mr Pitroda said one lakh telephone connections would be added to the city system.

Amongst the other growth centres the north eastern states would be given 50,000 additional connections, 5 lakh rural telephones, including one in each panchayat and STD system for the entire country, he said.

The commission during its 100 days of existence was busy working on introducing a system so as to get ready for the next growth plan. The next 100 days would be devoted to improving customer service.

Under the programme, he said all the 5,000 executives of the department would be asked to make one telephone call to a subscriber every day to obtain first hand knowledge of his problems with the system. The executive would be asked to submit the list of the subscribers they contacted so as to cross check through a third party, he said.

Regarding the problem of telephone equipment mentioned by a member, Mr Pitroda said that all the 12 telephone manufacturers had been asked to set up service centres in all the 4 regions of the country.

Mr Pitroda informed that complete deregulation of the telephone equipment manufacture was likely to bring about efficiency in the functioning of the system. This would ultimately lead to a situation where a customer could have

the entire equipment, including wiring, done by himself and the department would only provide the connection.

He also said that decisions had been taken to introduce telephone bill payment by cheque and also to provide itemised bills for a nominal extra payment.

On complaints about faulty billing on STD calls, Mr Pitroda said that an STD locking device would soon be introduced whereby a subscriber could unlock it by dialling a secret code number. In this respect, he blamed the customers for corrupting the entire system by resorting to extra payment to the linemen to make STD calls.

Mr Pitroda also said that 8 manufacturers have been licenced to make main automatic exchanges of 5 to 12 lines.

IRAN

Telephone Center Inaugurated in Mohammad Yar

90010069C Tehran *ETTELA'AT in Persian* 23 Nov 89 p 18

[Text] Orumieh—The 1,000 number telephone center of Mohammad Yar district, a tributary of the Naghadeh city region was inaugurated before noon yesterday amid ceremonies, and was put into operation for the use of the inhabitants of the region.

According to a report by IRNA, the Mohammad Yar Telephone Center that was made operable by the efforts of the telecommunications workers happens to be the 19th automatic urban telephone center proceeding to function in West Azarbaijan.

The center shall enter into the nation's aggregate communications network with an inter-city code before the end of the year.

During the inaugural ceremonies, the general manager of West Azarbaijan's telecommunications declared that in order to enhance the communications capabilities of Bazargan township its 400 number telephone center was also increased to 1,000 numbers.

Thousands of Telephone Numbers Assigned in Tehran

90010051Z Tehran *KEYHAN in Persian* 21 Nov 89 p 18

[Text] Qom—KEYHAN correspondent: By the end of this year, 30,000 new telephone numbers will be assigned in the cities of Tehran Province.

Mohammad Reza Sabur, the director general of communications for Tehran Province, who had traveled to Qom to visit the villages of that city, announced the above statement and added: Through the investment of 30 billion rials in Tehran Province by the communications company, a vast increase compared to past years, 30,000 new telephone numbers will be assigned to applicants in the cities of Karaj, Qom, Shahriar, Bomhan, Rudhan,

and Shahr-e Qods, and the villages. Most of the telephone numbers, that is, 15,000, will be for Karaj and the villages surrounding that city.

He also said: By the end of this year, in addition to this project, significant resources including communications offices and long-distance telephone systems will begin operation in the province, which will create significant qualitative and quantitative changes in long-distance telephone communications for customers.

He also said: By the end of this year, in addition to this project, significant resources such as communications offices and long-distance telephone systems will begin operations in the province, which in terms of quality and quantity will create significant changes in long-distance telephone communications for the customer.

In the next 10 years, a 20,000-unit telephone center will be built in Tehran Province, which will be fully operational by 1381 [21 March 2002-20 March 2003].

MALDIVES

Memo on INSAT 1-D Signed

BK1501134090 Delhi Domestic Service in English 1230 GMT 15 Jan 90

[Text] India and Maldives have signed a memorandum of understanding allowing Male the use of Indian national satellite, INSAT 1-D, after its launch in July. It enables Maldives to receive meteorological data and Doordarshan [television] programs for rebroadcast on the local television network. The agreement was signed in Male today by the Indian high commissioner in Maldives, Mr M.P.M. Menon, and the Maldives permanent secretary in the Foreign Ministry, Mr Ibrahim Hussain Zaki.

The agreed minutes of the Indo-Maldives joint commission meeting were also signed by the external affairs minister, Mr I.K. Gujral, and his Maldivian counterpart, Mr Fathullah Jameel, incorporating the new measures to assist Maldives in various fields and steps to increase bilateral trade. The minutes relate to removing the visa restrictions, civil aviation, health and education, and restoring ancient monuments in the Maldives.

PAKISTAN

Domestic Satellite Station Completed

55004700 Islamabad THE MUSLIM in English 12 Nov 89 p 8

[Text] Quetta, 11 November—Pakistan's first high-powered domestic satellite earth station (DOMSAT) has started functioning at Balochistan coastal town of Gwadar.

Official sources said here Saturday that work on 72 channel capacity domestic earth satellite station began at Gwadar during 1986. The DOMSAT project was completed by the Pakistan satellite telecommunication

experts in collaboration with the Japanese experts on satellite telecommunication.

The project, completed at a cost of Rs. 80 million, has started working through the Intelsat satellite over the Indian Ocean.

With the commissioning of DOMSAT the remote areas of Balochistan have been connected on the nation wide dialing (NWD) network.

At present 36 of the total 72 channels have been functioning at Gwadar satellite station the remaining 36 channels will be used for linking Gwadar station with Pasni, Jewani, Turbat and Panjgur ensuring the nation wide dialing facilities for the people of far-flung coastal belt Balochistan.

It would also help provide ultra high frequency (UHF) radio links with gwadur- Pasni, Gwadar Jewani and Gwadar Turbat.

The UHF radio link project in Balochistan coastal town is estimated to cost another Rs. 200 million.

With the installation of Gwadar earth satellite station 20,000 people would be able to watch television news and programmes with complete clarity.

Japan To Provide Assistance for TV, Lab Projects

BK1012113489 Islamabad Domestic Service in English 1100 GMT 10 Dec 89

[Text] Under two separate agreements signed in Islamabad today, Japan is to provide over 321 million rupees to Pakistan as grant in aid for the establishment of the second TV channel and a geo-science laboratory.

Over 247 million rupees are to be made available for phase 1 of the projects for establishment of a second TV channel. Over 74 million rupees will be used on the construction of a geo-science laboratory in Islamabad.

SAUDI ARABIA

Saudi Telecom Network To Be Upgraded

90AN0049 Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 23 Oct 89 p 21

[Article: "Saudi Arabia—Major Expansion and Upgrading Targetted for Next Five-Year Plan"]

[Text] The Saudi telecommunications network is expected to undergo major expansion and upgrading under the next five-year plan (1990-1994) put forward by the Saudi Ministry of PTT.

Projects worth more than \$600 million are believed to have been included in the plan, involving the renewal or replacement of equipment first installed in the late 1970s and early 1980s and the conversion from analogue to digital long-distance links.

Investment is expected to focus on the expansion of the mobile telephone system, the upgrading of the microwave, coaxial and fibre-optic networks, and the addition of more telephone lines to cut down waiting lists.

Investment is expected to be allocated as follows:

- \$180 million to install fibre-optic cables on main trunk routes.
- \$177 million for the expansion of the mobile telephone network, involving the addition of a further 10,000 telephones and the upgrading of the infrastructure to bring the total number of mobile telephones on the 450 MHz system to 30,000. The mobile network has also been allocated a further \$13 million for work in the sixth five-year plan.
- \$133 million for the addition of a further 500,000 telephone lines and the expansion of outside plants.
- \$90 million for the upgrading of the Kingdom's microwave network, for which \$53 million has been provisionally put toward by the PTT for further development work in the sixth five-year plan (1995-1999).
- \$23 million for the conversion of the coaxial cable backbone to a digital system.

Under the plan, the PTT is also expected to issue tenders for the supply and installation of subscriber radio systems, some of which are currently being installed in the south of the Kingdom.

Telecommunications Networks in Holy Cities Expand

54004503 Jeddah ARAB NEWS in English 29 Nov 89 p 2

[Article by Muhammad Ibrahim: "More Than 26 Million Telephone Calls Made by Pilgrims During Haj"]

[Text] Jeddah, Nov. 28—The guests of God made a total of 26,263,270 local and international telephone calls, using 4,693 lines during last year's Haj, providing in revenues more than SR23 million, Saudi Telecom-Western Region announced in a report covering its services and activities during the pilgrimage season.

Under instructions by Custodian of the Two Holy Mosques King Fahd and Crown Prince 'Abdallah, the PTT Ministry is determined to provide the best of services to pilgrims so as to perform the fifth pillar of Islam in ease, comfort and security, the report said.

The report said 169 new lines were added last year to further facilitate links with Islamic states and other countries. They included 48 for Egypt to raise its total to 346 lines, 24 for India which already had 83 lines, eight for Jordan which had a total of 104, two for Oman with a total of 19 circuits, 40 for Pakistan with 194, two for Qatar, raising its total to 70 circuits, 18 for Syria with 78 circuits, 15 for Turkey increasing the total of 95 and 12 for the United Arab Emirates which had a total of 146 circuits.

Answering the government's desire to render consummate services to pilgrims, PTT Minister Dr. 'Alawi Darwish Kayal instructed top officials at the ministry to increase, promote and modernize telecommunication services offered to the guest of God," the report said.

According to the report, telephone booths in Mecca were increased by 35 to 958 including 610 for international and 348 for local calls. Medina had 412 telephone booths consisting of 164 telephones for local and 248 for international calls.

The report said the international telecommunications offices were increased and promoted by the addition of new systems to pass calls automatically. A total of 28 new telephone cabins consisting of 394 circuits for international communications were added last year. The included 17 cabins in Mecca and the holy sites with 239 lines for direct international calls, six cabins in Medina consisting of three automatic cabins for direct calls. Together, the six cabins have 61 lines for overseas calls. Jeddah had five new cabins fully automated with 94 lines.

In 1986, Mecca and the holy sites of Mina, 'Arafat and Muzdalifah had 801 coin telephone cabins which increased last year to 958 while in Medina they increased from 402 in 1986 to 412 during the last Haj season.

The report said operating telephone lines went up by 63 percent last year to 4,693. Teams of technicians and experts are working round the clock to ensure proper performance of these lines.

According to the report, 700 new telecommunications circuits were added last Haj season to Jeddah exchange which was programmed to give priority to calls coming from Mecca, Medina and the holy sites. A regional maintenance center was built to rectify faults and more shaded areas were provided to protect Hajis from the sun.

The report noted that local and international calls made by pilgrims had increased by 6.4 percent over the previous year to more than 26.6 million. From Mecca, pilgrims made 9,186,370 local and 6,718,660 overseas calls and from Medina they made 6,223,610 local and 4,134,630 international calls.

Pilgrims sent 65,519 cable and telex messages. These included 24,979 local and 12,476 international cables in addition to 367 telex messages from Mecca and 15,848 local, 11,758 international cables and 91 telex messages from Medina.

Revenues made by the PTT Ministry during the previous Haj season amounted to SR23.09 million registering a rise of 13 percent over last year.

The report said more coin telephones will be constructed in the holy sites next Haj season to meet the growing demands of pilgrims. The capacity of the Jeddah exchange (JINT) will also be increased. More preparations and arrangements will be made to prevent any communication faults in the future.

According to the statistics contained in the report, the number of local and overseas calls made by pilgrims in Mecca increased from 13.6 million in 1985 to 15.9 million last Haj season. Cables and telegrams dropped from 68,489 in 1985 to 37,455 in the last Haj season while telexes went down from 560 to 367.

In Medina telephone calls increased from 8.4 million to 10.3 million during the same period.

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

Japan To Provide Aid for Telephone Services

*44000120Z Aden Domestic Service in Arabic 1500
GMT 29 Nov 89*

[Text] A memorandum of understanding was signed at noon today [29 November] at the Ministry of Communications between our country and the Government of Japan.

Under this agreement, our country will be granted a soft loan worth \$50 million for the purpose of expanding and modernizing the capital's telephone network with several modern exchanges so their capacity will reach about 50,000 telephone lines instead of the present 19,600 lines.

The network will increase quality of performance and improve services to the state of the art. With the implementation of this project, our country will for the first time have modern technology in the communications field known as digital technology.

Brother Salih 'Abdallah Muthanna, minister of communications, signed the memorandum of understanding on behalf of the Yemeni side, while the charge d'affaires of the Japanese Embassy in Aden signed on behalf of the Japanese Government. The signing was attended by Brother Dr Ja'far Hamid, deputy minister of planning, and a number of officials in the Ministry of Communications and the Communications Corporation.

Direct Calling to Sweden Inaugurated

36500133 Stockholm *DAGENS NYHETER* in Swedish
10 Dec 89 p 6

[Text] The Soviet Union has opened the telephone lines to Sweden. Accordingly, for 1 week now it has been possible to dial directly without being connected via an operator. Most cities in the Soviet Union equipped with automatic switching stations can be

reached directly. This even applies to the capital cities of Estonia, Latvia, and Lithuania. Sweden and the Soviet Union once before tried automatic call connecting. But according to the [Swedish] Telecommunications Agency, this trial was interrupted because of technical problems. The Telecommunications Agency asserts that the Soviets have promised to open new lines to Sweden, which should improve telecommunications even more.

EUROPEAN AFFAIRS

European HDTV Association Formed

90WT0031 Paris LE MONDE in French 17 Jan 90 p 29

[Article by Michel Colonna d'Istria and Annie Kahn: "Current Equipment for High Definition Television Has the Same Efficacy as the Maginot Line in 1939" Declares Antoine Lefebure, CEO of Technique Media"]

[Text] In February, the European Economic Interest Group [GEIE] for high definition television should begin work. Uniting the relevant industrialists (Thomson, Philips, and Bosch), manufacturers, and broadcasters, it will take up where International HD, a completely French GIE [economic interest group] created a year ago by Thomson Philips and the Societe Francaise de Production, leaves off. In order to stand up to the Japanese, who are pulling out all the stops in an attempt to impose their Muse standard, and, consequently, their broadcast, reception, and transmission equipment, the Europeans must join forces. Particularly if they expect to have the slightest chance of bringing the Americans in on their side.

Michel Carpentier, director of the EEC's DG 13 (Directorate of Telecommunications, Information and Innovation Industries), is convinced of this. He therefore has high hopes for this GEIE, which could permit an escape from the vicious circle: Manufacturers refuse to invest in high definition because there is neither equipment nor consensus among the industrialists, whereas the industrialists are stymied in the promotion of their equipment because there is no production. But, will a GEIE with limited funds (its budget would reportedly amount to 100 million ECU, or approximately Fr 700 million, over 3 or 4 years) be adequate?

Antoine Lefebure, CEO of Technique Media, an audio-visual engineering company, thinks not. He is sounding the alarm concerning the lack of coordination among the parties involved in this market, with sales of some tens of millions of dollars. "Current equipment for high definition television has the same efficacy as the Maginot Line in 1939. And the Japanese have already launched their offensive."

Although a certain cooperation functioned well on the level of research for creation of prototypes within the framework of the EUREKA project, nothing has worked since the industrialization phase began. In his opinion, rather than uniting the partners with divergent interests, the public authorities have only aggravated the confusion. "Since we are dealing with a mediation system, everyone has to say his piece, although the technologies involved are complex. This huge marketing and policy circus is making the sector even more unstable. We are at a turning point." For two reasons. First, "the D2Mac Paquet must not be considered a transitional standard."

True high definition television will not be available to the general public for 7 or 8 years; however, thanks to the D2Mac Paquet standard, current receivers can already receive satellite transmissions using this standard. Thus, in the interim, there is a market for "upgraded" TV sets. This generation of receivers should have a 16/9 format and a double scanning system to refresh the image twice as frequently. However, to take advantage of these set, it would still be necessary to have programs capable of applying these technical improvements. To achieve this, "it would suffice, on the one hand, to protect the rights of 35mm films and Cinemascope, and, on the other hand, to develop systems capable of converting films produced in high definition into 35mm to induce producers and film-makers to use this technology," declares Antoine Lefebure. "Sony has done this through its purchase of the American production company Columbia and through installing, especially in London, machines to convert the Japanese standard into 35mm, as well as a post production studio for high definition image processing." In its preparation for the second stage, that of HDTV in the strictest sense, the GEIE runs the risk of suffocating the projects rather than stimulating them. It is necessary to establish an industrial system, to define specifications, to give industrialists specific objectives and deadlines by guaranteeing orders, and to develop synergy between industrialists and programming professionals. "A good many tasks which are not within the jurisdiction of the EEC. Investment is not the role of public authorities, but rather of industrialists," he retorts.

The accomplishments in aeronautics and space relative to Airbus and Ariane (with the creation in 1975 of the European Space Agency), whose clients are companies and, in some cases, even nationalized companies, are, in fact, quite difficult to duplicate in a broad-based consumer industry.

Nokia Joins Leading Firms Developing HDTV

90AN0052 Stockholm DAGENS INDUSTRI in Swedish 11 Oct 89 p 11

[Report: "Nokia Included in Elite Group Developing HDTV"]

[Text] Nokia has been included in the top group which is developing the European high-definition, or HDTV, technology.

There are now four arch-competitors—Philips, Thomson, Bosch, and Nokia—which dictate the tone in the project to develop a European standard for HDTV. For Nokia, which today is Europe's third largest TV producer, it is a real success to be upgraded to A membership and get a management position on the EUREKA-95 project, which is developing and coordinating research on European high-definition technology.

Side by side with its arch-competitors Philips, Thomson, and Bosch, Nokia is challenging the Japanese and Americans in HDTV technology, which will revolutionize picture production and handling within the next decade.

"We are working together 100 percent within the EUREKA-95 project. However, that aside, we are still competing just as hard as ever," says Heikki Koskinen, strategic manager for Nokia's consumer electronics.

Nokia has been conducting research into HDTV technology since 1986 and has had three parallel B memberships in EUREKA-95 for 2 years through different subsidiaries.

"We would have liked to become an A member sooner, but were successful only after acquiring firms in central Europe; this convinced the project leaders that we had enough muscle to take part in leading the project," says Koskinen.

EUREKA-95 is one of the most important of some 250 research projects within EUREKA. The first 3-year phase has a budget of some SKr 1.5 billion. This year Nokia is employing some 50 full-time HDTV researchers at its plants in Finland, Sweden, West Germany, and France.

The race for HDTV between the Japanese, Americans, and Europeans features some hard-nosed competition. "It is a global market, which will be worth some \$170 billion up to 2010. The European HDTV market is estimated to be worth some \$40 billion up to 2010," estimates Heikki Koskinen.

The vision which leads the TV manufacturers of the world today is a revolution which can be compared to that which happened when black-and-white TVs were replaced by color TVs.

"The world's 500-600 million TV receivers will be renewed when HDTV breaks through. The technology will at the same time revolutionize picture production and handling," Koskinen noted.

The enthusiasm within Nokia is obvious. The contribution to EUREKA-95 is an important strategic bet for the concern's consumer electronics. In less than 3 years, the investment will yield returns when the first European HDTV trial broadcasts take place from the summer Olympic Games in Barcelona. For this, some 1,000 HDTV receivers will be manufactured by Europeans.

Nokia currently stands alongside Thomson, Philips, and Bosch in confronting the global giants—primarily the Japanese—which have decided to develop HDTV technology that is not compatible with systems available today. The Europeans will develop a standard which is compatible with existing broadcasting and receiver systems.

Italy Joins EUREKA HDTV Project

90AN0054 Brussels *EUROPE in English* 9 Nov 89 p 6

[Text] Brussels, 8 November (EU)—At the margin of the [EC] Telecommunications Council [meeting on 7 November], the Italian postal services minister, Mr Mammi, said that Italy had accepted the common action of the Twelve in favour of the European norm for high-definition television because it had been admitted into the EUREKA 95 project. The Italian consortium CISAE entered, the minister said, the leading group of those responsible for this project, alongside Philips (the Netherlands), Thomson (France), Bosch (Germany), etc. The CISAE consortium regroups Seletco, Selenia, Telettra, SGS-Thomson, Videocolor, RAI, and Philips/Italia.

Italy had reservations about the Council's decision for as long as its total participation in the EUREKA 95 project had not been ensured. This reserve was lifted on Tuesday.

Telecommunications Satellite Survey Reviewed

90AN0077 Paris *LE MARCHE DE L'INNOVATION in French* 27 Oct 89 p 6

[Text] Fifteen communications satellites were orbited in 1988 and as many again in 1989. The latest Euroconsult study confirms the significance of and the slowdown in space telecommunications. According to the document ("World Space Industry Survey"), almost 1,850 repeaters were in service at the end of 1988, and this total should rise to 2,500 by the end of 1992. Of the 30 satellites launched during the past 2 years, nine were orbited by European organizations, seven by Japan, six by the United States, five by international organizations (Intelsat), and three by other countries.

In terms of applications, 16 of these satellites are devoted to national telecommunications systems, six to international or regional systems, six to direct television, and two to relay systems such as the Tracking and Data Satellite (TDRS). Euroconsult also notes the maturation (and virtual saturation) of the North American market (United States and Canada), which is undergoing a renewal phase rather than a development phase. On the other hand, Europe is still enjoying continuous growth; saturation should not occur before 1993. Taking this situation into account, this document also includes several interesting recommendations.

As regards space telecommunications, continued growth depends essentially on the creation of new services: decentralized digital business connections, direct TV distribution, and connection systems between mobile stations. However, expansion of these services is hampered by overly restrictive regulations (particularly in Europe, because of established monopolies). Regarding direct TV, Euroconsult believes that the market remains uncertain (which surprises no one), and that reception-antenna technology is moving toward less powerful and hence cheaper satellites.

As regards cable-satellite competition, Euroconsult believes that "The increase in cable power has brought into question the justification for certain investments in space, but the two systems are both competitive and complementary." Moreover, optical-fiber cables continue to advance, particularly in high-flow and point-to-point long-distance connections.

EC To Stimulate Demand for ISDN

90AN0124 Chichester INTERNATIONAL
TELECOMMUNICATIONS INTELLIGENCE in
English 25 Dec 89 p 1

[Article: "DG XIII Wants User-Driven Euro-ISDN"]

[Text] The Commission of the European Community (CEC) is planning to launch an initiative to stimulate user demand for ISDN facilities and to encourage telecommunications suppliers to produce more ISDN terminal equipment. This is likely to follow the same basic concept as the "Partnership" programme launched earlier this year by France Telecom. Under this scheme, France Telecom will partially fund the development of specific ISDN applications.

Now, Directorate General XIII of the CEC is actively contemplating setting up a similar scheme on a Community-wide basis. It is not clear at this time whether this will involve direct EC funding of projects.

At the same time, the Commission is to examine in detail how it might apply ISDN to its own Europe-wide needs for the dissemination of information and document and image processing. This activity is expected to lead to common technical specifications for the procurement of terminals by the end of 1990.

These plans were outlined by Commission telecommunications expert Frederick Richards at a conference on ISDN staged by consultants Frost and Sullivan in London earlier this month.

Richards told delegates that, until now, ISDN developments had been primarily technology driven. As a result, most of what had been achieved had been for the benefit of the suppliers and telecommunications network operators. "Now is the time to take account of what users need," he said.

"We have every reason to be optimistic that by 1993 there will be a coordinated Community-wide ISDN," he stated. "Now we have to convince users that it will be of practical benefit to them and to engage their interest." He wants to see the formation of Community-wide user groups, each of which will provide a forum for discussion with equipment and service suppliers. "Any organisation keen to take part should write to DG XIII straight away," he added. "We want them to be well informed on the nature of the service and to take account of the availability of Community-wide ISDN and the effect this will have on their business activities."

The success of the French partnership plan was described by Jean-Pierre Guenin, the France Telecom executive responsible for its implementation. He said that to date 39 partnership contracts have been signed covering a diversity of applications. Nearly two-thirds of these—57 percent—are multimedia applications or involve image processing of some kind, he says; 25 percent are text based and just 18 percent are dedicated to data. Nearly all, however, are based on the use of personal computers adapted with ISDN expansion cards.

For a project to be accepted into the partnership scheme, France Telecom sets three criteria:

- It should be innovative and able to exploit ISDN capabilities including high bit-rate use of supplementary service, use of two simultaneous calls, etc.
- It should be commercially realistic, and include a complete business plan showing the return on investment and in particular the benefits of the use of Numeris (the France Telecom name for its national ISDN) compared with alternative solutions.
- It should have potential for "generalisation"—it should be adaptable to use in other activity sectors.

Once developed, the application and any associated hardware and software will be commercialised by the service provider involved in the contract. Eighteen months after the start of the programme, Guenin says that most of the projects accepted are operational already.

A number of lessons have been learned, he concludes. "First, the importance of image and document transfer, which was impractical before ISDN; second, the large diversity of the activity sectors involved in ISDN—from real estate to banking to medicine, tour operators, press and computer-aided design; third, the major role of the personal computers which are used in all of the projects; and finally, that ISDN really is new and should not be looked upon as merely a slight improvement on existing uses of the telephone network.

EC Agrees on Telecommunications Liberalization

Council, Commission Compromise

90AN0110 Brussels EUROPE in English 9 Dec 89 pp 7-8

[Article: "Telecommunications Council—The Telecommunications Internal Market Is Created Through an Agreement Between the Council and the European Commission on the Conditions of Liberalization and Among the Twelve on Harmonization"]

[Text] The overall agreement between the Council and the European Commission on the liberalization conditions for telecommunications services and among the ministers on harmonization conditions is "a political

compromise in which everyone has given ground while preserving the heart of his individual standpoint," said the French minister of postal services, telecommunications and space, Mr Paul Quilès, who chaired the Telecommunications Council held on 7 December. The president welcomed this "victory for the member states, consumers, and operators whose investments will be protected, which is important, because we will be taking a common path towards building the future of the telecommunications internal market." European Commission Vice President Sir Leon Brittan also welcomed this "great day for the liberalization of telecommunications in the EC." Sir Leon confirmed that if an agreement between the Commission and the Council was reached on the content of the directive on the liberalization of services, opposition remained firm on the choice of its legal basis. EUROPE reminds readers that the Commission based the directive on Article 90 (3) of the EEC Treaty, which gives it exclusive competence; the majority of the member states consider that in the case in point, the Commission has exceeded its competences. The coming judgment by the Court of Justice on a similar case might untie this "legal knot." Vice President Filippo Maria Pandolfi thinks that safeguarding the link between the liberalization of services and their harmonization is a good solution for the applicability of European standards, which will be the result of the Open Network Provision framework directive.

The internal telecommunications market must be achieved by a parallel double demarche: the liberalization of services and harmonization of technical standards.

1. Liberalization of Services

a. legal aspects: The Commission thinks that liberalization falls under its exclusive competence by virtue of Article 90/3 EEC; in 1988 it adopted a directive liberalizing the terminals market on the basis of this article. Most of the member states, contesting the Commission's competence, attacked this first directive in the Court of Justice, which will make a judgment shortly.

Upholding its position, in June the Commission adopted the second directive aimed at liberalizing services, without notifying the member states, however (which would have implied its entry into force), thus recognizing the link with the harmonization directive submitted to the Council. The Twelve obviously are upholding their position; the Court judgment on the 1988 directive will shed light on the situation.

b. Content of liberalization: Several member states are contesting the breadth of the liberalization measures decided on by the Commission. Broad agreement has been reached on keeping telex services, telephone and the network itself under public monopoly, and on opening to competition those services called value-added services (airline reservations, telebiling, management of bank accounts, etc.); on the other hand, agreement did not emerge on the liberalization, as the

Commission had predicted, of packet or circuit switching (which allow sending computerized data on the network). This aspect was resolved via a compromise which also covers harmonization measures.

2. Harmonization of Technical Standards (carrying out the Open Network Provision [ONP], the open network of telecommunications services)

a. legal aspects: The Council's competence, on a Commission proposal, is not contested. The Commission presented its proposal at the same time that it adopted its liberalization directive.

b. Technical Content: No member state contested the need to harmonize the standards related to telephone, telefax, etc.; differences concerned packet or circuit switching. Certain member states did not think this harmonization was needed, free competition playing between the different systems. The compromise proposed by the Council covers both the limits of liberalization and the timetable and terms of harmonization.

In this latter area, the compromise includes the immediate launching of technical harmonisation, so that the European networks may interconnect, and the adoption later, in 1992, of a complete directive on the commercial and tariff harmonisation of data transmission services. In the meantime, a gradual step will be adopted towards voluntary harmonisation. The global agreement which was reached by the Council at its meeting on 7 December rests on a dual demarche:

1. Regarding the liberalisation of services, the Commission has informed the Council of the amendments that it wanted to make to the text of its directive on this. The amendments formally uphold the modifications made in the presidency's compromise supported by a majority of delegations at the Council of 7 November. This agreement on the basis of the directive thus amended allowed for a resumption of negotiations on the directive, based on Article 100A of the EEC Treaty, within the Council.

2. Regarding the framework directive, the ministers came to a political agreement on a common position. This is based on the presidency's compromise, which proposes a timetable for the harmonising of the various telecommunications services, covering the technical aspects, the conditions for use (rules on confidentiality in particular) and tariffs.

Text of the Council Conclusions

Finally the Council cosigned the result of its work in the following text:

"The Council notes that a large majority of member states agree on the changes made by the Commission to Articles 3 and 10 and to the notes in the text of its directive on competition in telecommunications services markets, which allow for the adoption of the directive within the framework of an overall compromise

"The Council welcomes the spirit of cooperation between the Commission and the member states which made progress possible with a view to the completion of the internal market in telecommunications services.

"The Council notes that a large majority of member states contest the legal basis chosen by the Commission for its directive and invites it to consider, in future, that Article 100A constitutes an appropriate basis for the implementation of the objectives contained in the Commission's Green Paper and in the Council resolution of 30 June 1988."

'Excluded Sectors' Considered

90AN0110 Brussels EUROPE in English 9 Dec 89 p 8

[Article: "Telecommunications Council: Exchange of Views on Free Competition in Public Telecommunications Markets"]

[Text] The Telecommunications Council also held an exchange of views on those aspects concerning telecommunications in the proposed directive on procedures for public markets in "excluded sectors" (telecommunications, water, energy and transport). This proposal is aimed at establishing a flexible system for procedures in markets for work, supplies and software services, whilst guaranteeing the respect of the principle of non-discrimination and transparency. The delegations raised some aspects concerning, in particular, the application thresholds, the reference to European norms in the sector of telecommunications, and relations with third countries.

The proposal is included on the agenda of the forthcoming "Internal Market" Council on 21 December; it will be informed of remarks made by the Telecommunications Council.

Belgium, Italy Challenge EC Directive

90AN0113 Brussels EUROPE in English 13 Dec 89 p 10

[Report: "Court of Justice: Belgium and Italy Have Challenged the European Commission Directive on Liberalization of Telecommunication Services Without Awaiting Its Notification to the Member States"]

[Text] Belgium and Italy have challenged the European Commission before the Court of Justice in order to obtain annulment of its directive dated 28 June 1989 on the liberalization of telecommunication services. These two member states are contesting the powers the Commission says it holds by virtue of Article 90, Paragraph 3 of the EEC Treaty and which it claims allows it to take measures to break public monopolies in the field of telecommunication services. Belgium and Italy affirm, on the contrary, that this Article 90 (3) only gives the Commission powers of simple surveillance and vigilance as to compliance by member states with provisions of the Treaty concerning the application of EEC competition rules on public enterprises (Article 90, Paragraph 1).

These legal positions were well known and all the member states share the view held by Belgium and Italy. What makes this an unprecedented case, however, is that the European Commission has not yet notified this directive to the member states. The latter have only two months after notification of a directive to challenge it before the Court of Justice. It appears that these two member states—out of concern that their proceeding be declared inadmissible by the Court—preferred lodging an appeal now, without awaiting official notification of the directive. EUROPE believes that the Commission plans to plead inadmissibility because the directive has not yet been officially notified and the two-month time period for appeals only begins after notification.

With regard to the content of the liberalization, the compromises reached last week within the Council allowed an agreement in principle to be reached.

EC Council Calls For More Wideband R&D

90AN0107 Brussels EUROPE in English 8 Dec 89 p 7

[Article: "Telecommunications: Council Statement Favouring Increased Research in the Wideband Telecommunications Sector"]

[Text] The Telecommunications Council has adopted a statement on the new forms of Community R&D in the field of wideband integrated telecommunications. In this text the Council:

1. Welcomes the initiative by CEPT—European Postal and Telecommunications Conference—for the creation of the European Institute for Research and Strategic Planning (EUROSCOM) in the field of telecommunications;
2. Calls on the European Commission to create a working group composed of representatives of the member states for defining and setting up a structure appropriate to continuing R&D programmes concerning wideband telecommunications which will allow cooperation among telecommunications operators, industrialists, and administrations and will prepare the introduction of wideband integrated communication services throughout the EC.

The statement calls for close coordination among demarches taken by CEPT and the EC. The Commission will present a report before the Telecommunications Council session of April 1990.

EUREKA COSINE Links European Researchers

90AN0092 Luxembourg IES NEWS in English Nov 89 p 9

[Article: "Pilot International Research Network Infrastructure Contract Signed"]

[Excerpt] A contract for the provision of a pilot Europe-wide interconnection of computer networks for researchers has been signed between the Commission, representing the partners in the EUREKA COSINE (Cooperation for Open Systems Interconnection Networking in Europe) project, and PTT Telecom of the

Netherlands. The contract provides for a five-month period of preparation and commissioning, starting in September 1989, followed by 12 months of full pilot service.

The Commission is to contribute the major portion of the funds on behalf of the Community and its member states from the budget of the ESPRIT programme, while the other participating COSINE states are to provide the remainder.

The Pilot International X.25 Infrastructure (IXI) Backbone Service is the first major activity of the implementation phase of the EUREKA COSINE project. PTT Telecom will be responsible for establishing, operating and managing the service in cooperation with other European telecommunications administrations.

The COSINE project aims to provide an open, standards-conformant computer communications environment for the European research community. Responsibility for technical aspects has been given to RARE, the European association of users and providers of research networks.

The research networks will be connected to the Backbone via 64Kbit/sec X.25 access points, with a possibility for a later upgrade to a speed of 2 Mbit/sec. The countries to be interconnected are Austria, Belgium (also providing access for Luxembourg), Denmark, France, [West] Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden (providing a connection to the other Nordic countries: Finland, Iceland, and Norway), Switzerland, the United Kingdom, and Yugoslavia.

Following RARE's specifications, the IXI pilot service will use data communications protocols that conform to the CCITT X.25(84) set of recommendations and will allow connectivity to X.25(80) subnetworks. It will allow not only improved connectivity between the participating organisations in RARE, but also the possibility of investigating a number of the most important aspects of the management of pan-European X.25 interconnections.

During the project operation, steps will be identified which are necessary to ensure continued availability of IXI or equivalent functionality for the full duration of the COSINE Implementation Phase, which is expected to start soon.

BELGIUM

RTT Awards Contracts for ISDN Development

90AN0121 Chichester INTERNATIONAL
TELECOMMUNICATIONS INTELLIGENCE in
English 4 Dec 89 p 1

[Article: "Belgium: RTT Awards Contracts for ISDN Stimulation"]

[Text] The Belgian Regie des Telegraphes et des Telephones (RTT) [State PTT Administration] intends to emulate France Telecom in its efforts to stimulate use of

its ISDN network. Ronny David, engineer, director responsible for ISDN, told ITI that the RTT has placed contracts "with a number of companies" for the development of ISDN terminal hardware and is discussing the partial funding of applications development.

David said that terminals under development include a slow scan image processor and a small PABX that will offer full ISDN compatibility both for terminals and for connection to the public network. However, he declined to name any of the companies working on these developments or to indicate how much money the RTT has committed to the venture. "It's a delicate subject," he commented. As in France, the Belgian authority intends to contribute toward the costs involved in developing specific applications. Again David refuses to be specific, but explains that he expects such projects to involve both hardware and software firms in partnership with users. Now that the RTT is to decide the level of its involvement, "We expect to contribute between 30 percent and 50 percent of the development costs of selected projects," David says.

In the meantime, uptake of Aline, as the Belgian ISDN is called, appears to have been less than enthusiastic. Since its official launch as a commercial service on June 29, 1989, less than 100 subscribers have taken up the initial offering of basic rate access, while primary rate access users number just seven. And that is despite David's claim that Aline is now within reach of around 33 percent of the nation's business telephone users.

He explains that the service is based on the use of a remote concentrator unit designed by Alcatel Bell Telephone Manufacturing (BTM) to provide an ISDN "front end" to the System 12 switches it is installing for Belgium's digitalisation programme. "We can place these wherever there is a demand for ISDN," David says. In this, too, the structure of Aline closely resembles France Telecom's Numeris strategy. Numeris is based on similar concentrators working to Alcatel E-10 switches.

In Belgium ten concentrators have so far been deployed working to three System 12 exchanges. David says the concentrators are located in Brussels, where there are three units, with single units in Antwerp, Ghent, Kortrijk near Lille on the French border, Liege, and Namur. An additional concentrator is scheduled to be installed in Antwerp "in the near future."

Primary Rate Access services are also available using direct connections to the System 12 switches. This will be provided on customer demand and eventually extended to all 171 System 12 exchanges in service in Belgium. According to BTM, it has already delivered System 12 equipment with a capacity of around 900,000 lines to local exchanges and 135,000 trunk lines.

For international digital working, a 64 KBit/s "pre-ISDN" service is provided working to France, UK and the USA, David says. "The inland network is based on standards that are very similar to those implemented by

France Telecom for the Numeris network," David comments, and he expects a high degree of interconnectivity across the border. Phase 2 of the plan will implement full European standard ISDN protocols, and David anticipates that this will be available by 1992.

Despite its plans to stimulate demand by funding terminal and applications development, the RTT has not followed the French too closely when it comes to setting tariffs. David says that installation fees for basic rate access have been set at BFr 12,000 (\$320) with a two-monthly rental of BFr 4,700 (\$125). For Numeris, France Telecom charges \$112 for installation and a monthly rental of \$50. David says that Aline provides for B-Channel packet switching but that adds a further BFr 12,000 every two months to the rental bill.

Usage tariffs have been set at BFr 6.00 per distance-dependent time unit—20 percent higher than for ordinary PSTN voice telephony. Again this is marginally higher than usage tariffs announced by both France Telecom and British Telecom, where ISDN voice traffic is to be charged at the same rate as the PSTN. He would not comment on what he expects primary rate users to pay, except to say that Primary Rate Access "is very expensive."

CANADA

Nortel Unveils Fiber Optic High-Speed Equipment

55200014 Ottawa *THE OTTAWA CITIZEN* in English
13 Oct 89 p C 7

[Article by Mike Urlocker: "Northern Telecom Creates Super-Telephone Technology"]

[Excerpt] Montreal—Northern Telecom Inc. has unveiled high-speed equipment that can pack television, computer and voice signals on one telephone line.

The new line of products, called FiberWorld, is the first fibre-optics based telephone transmission and switching system.

Executives of Toronto-based Northern predicted FiberWorld will be used by telephone companies around the world to pipe in high-definition television, dial-up video conferences, home shopping, computer data banks and traditional telephone signals.

It was unveiled Thursday in Montreal, where much of the equipment will be manufactured.

Futurists have long dreamt of such systems, but telephone switching equipment has been an obstacle because it couldn't handle the high speeds needed to send video.

The new switches operate up to 3,000 times faster than current models, said Denis Mercier, Northern's vice-president for Quebec.

Northern, a subsidiary of Bell Canada's parent BCE Inc. of Montreal, plans to release a series of major products in the FiberWorld series starting in early 1991.

"We want to make it quite clear that this is not an announcement of what we might do or could do," said Mercier.

The FiberWorld system was developed at a cost of \$240 million over the past five years, mainly at Nepean-based Bell-Northern Research Ltd., Northern's research subsidiary.

David Vice, Northern's president, predicted FiberWorld products would be an "encore" to the company's highly successful entrance into the digital telephone switch market in 1978.

"We took a family approach to the marketplace (in 1978), which meant that our competitors have never caught up, not even to this day," said Vice.

Vice said trials of the new equipment will begin in January by a dozen North American telephone companies, including Bell Canada, Alberta Government Telephones, B.C. Tel, Nynex in New York and Bell South in Atlanta.

Northern is also betting that FiberWorld, based on a new international standard for telecommunications equipment, will finally make Northern a major player off the continent.

Northern has made inroads in Japan and Australia, but overseas sales counted for only four percent of revenue last year.

"It was from a global perspective that we approached the development of FiberWorld," said Vice.

[Passage omitted]

Telecommunications Industry Launches National R&D Strategy

55200017A Toronto *CANADIAN COMMUNICATIONS REPORTS* in English Vol 16, No 22, 30 Nov 89 pp 2-3

[Text] An industry-led strategy that targets personal communications for business and private users has received first-year funding of \$1 million from a pre-competitive R&D consortium. The objective of Vision 2000 is to give Canadian industry a competitive edge in advanced communications technologies.

Contributing corporations from across the country include Bell, CNCP, Microtel Pacific Research, Gandalf Technologies, Motorola Canada, Ericsson Communications, Telesat Canada, Teleglobe Canada, Cantel, Comcheq Services, Newbridge Networks, DTI Telecom, DATAP Systems, Spar Aerospace, Scotcomm, Soft Words, BCE Mobile, Bell Northern Research and INSINC.

It was time for the private sector to demonstrate its commitment to the future of communications R&D, said Bill Hutchinson, president of William G. Hutchinson & Co. Ltd. "This project... will improve the competitiveness of Canada's high-tech industries in global markets."

The private sector, in cooperation with universities and government, will manage the Vision 2000 program, develop a business plan and coordinate the various projects. In addition, the DOC will establish a Vision 2000 project office to provide liaison, policy, administrative and R & D support for the private sector.

Communications minister Marcel Masse hailed the project as an "important event in the world of Canadian communications R&D." Once completed, it will generate an increase in Canadian productivity by ensuring greater efficiency in all sectors, he added.

The global info-tech marketplace is becoming increasingly competitive at a time when Ottawa's resources are being squeezed "and the funds it does have must be used strategically," Masse said. He pointed out that the European Economic Community is devoting 40 per cent of its \$5 billion budget to new information and communications technologies while Canada's investments in those same areas have been falling behind other OECD countries.

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Canadian Government Lags in Telecoms Technology

90AN0060 Chichester *INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE* in English 30 Oct 89 p 7

[Report: "Federal Government Lagging Behind in Telecoms Technology"; all figures are in Canadian dollars]

[Text] The Canadian federal government, the largest domestic user of telecommunications goods and services, is behind the times in using the latest telecommunications technologies, resulting in inefficient services and lost savings, according to the auditor general of Canada in his annual report to Parliament.

In a special audit of the government's management and use of telecommunications, the auditor general, Kenneth Dye, reports that it is not achieving significant potential savings in costs that could be realised from using more modern and efficient technology and through better planning. At a time when telecommunications has a vital role in ensuring the efficient delivery of services, the government is providing no clear leadership to departments. That criticism focuses on the federal Communications Department, whose role is the control of the Government Telecommunications Agency (GTA) as well as the development of communications policies fostering the development of technologies needed to provide better services to Canadians.

Examining overall government spending, the auditor general says annual telephone bills are nearly \$1 billion, of which \$490 million is spent to lease voice and data services from telecommunications carriers, including the GTA. Services worth about \$320 million are bought from private carriers and \$170 million from GTA, with a further \$540 million going on capital expenditure. For computer communications alone, the report said that from 20 to 30 percent (worth between \$30 and \$45 million) a year could be saved if the government consolidated all its data communications services.

Focusing particularly on telecommunications programmes of five main departments, the report found that they had all developed their own redundant cross-Canada data networks, losing significant cost-saving opportunities by not having a government-wide efficiency perspective. Most departments had their own packet-switched networks, preventing them from taking advantage of a new 20-per-cent bulk discount that GTA now receives from telephone companies for packet-switched services, recently authorised by the federal regulator, the Canadian Radio Television and Telecommunications Commission.

Masse Says Spectrum Allocation Policy To Be Reassessed

55200017C Toronto *CANADIAN COMMUNICATIONS REPORTS* in English Vol 16 No 22, 30 Nov 89 p 5

[Text] Communications minister Marcel Masse says he plans to reassess Canada's spectrum allocation policy. Speaking at the Spectrum 20/20 conference held recently in Montreal, he said the rapid emergence of new technologies requiring spectrum—mobile satellite services, cellular telephones, facsimile and computer services and HDTV—indicates the time is ripe to look again at spectrum policy and its role in the communications infrastructure.

Masse said the reassessment will focus primarily on the following questions:

- • Would auctions of scarce frequencies among pre-qualified applicants be a useful approach?
- • To what extent should economic factors be given priority in the allocations of bands to particular services?
- • Should more emphasis be put on using alternatives to radiocommunications as a means of transmitting information, including broadcasting?
- • To what extent are Canada's current spectrum management mechanisms and procedures appropriate to rapidly developing technologies?

First move in the process will be a series of public consultations initiated by the DOC, Masse said. Then later next spring, a working paper will be issued, followed by a discussion paper and studies, which will be used to solicit opinions from interested parties.

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Linear Variable Differential Transformer Contract Let

55200018E Toronto *CANADIAN COMMUNICATIONS REPORTS in English Vol 16 No 23, 15 Dec 89 p 6*

[Text] Navatronics of Canada Ltd., Stratford, has received a \$131,000 contract under the Defence Industry Productivity Program (DIPP) to conduct R&D on a new line of linear variable differential transformers.

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Telecom Canada Launches Cross-Canada ISDN Trial

55200018C Toronto *CANADIAN COMMUNICATIONS REPORTS in English Vol 16 No 23, 15 Dec 89 p 4*

[Text] Alberta Government Telephones (AGT), Bell Canada and New Brunswick Telephone (NBTEL) have begun testing the interconnection of their ISDN systems in Calgary, Ottawa and Saint John over Telecom Canada's fiber optic network. Purpose of the public network trial is to prove the feasibility of evolving ISDN technology through existing systems.

The three telcos have already been verifying ISDN access with their own in-house and customer applications. Among other things, the trial will provide the testing grounds to verify the proper functioning of inter-company ordering and installation procedures.

Sixty-five telco ISDN users, in groups ranging from marketing to engineering to ISDN Standards, are participating in the trial. As their telecom requirements vary greatly, Telecom Canada expects the trial will turn up useful information on how commercial ISDN users will want to use the technology.

The trial will make use of Common Channel Signalling Seven (CCS-7) technology to separate call signalling information from the lines normally carrying customer traffic. This enables constant end-to-end communication to monitor the network, and accommodates such features as Calling Line Identification for long distance calls, which allows identification of a caller, even before answering.

Other applications to be demonstrated during the trial include:

- Network Ring Again, which provides, via the long distance network, the automatic redialing now available at a local telephone exchange.

Call Forwarding—again, the service available on a local basis will be duplicated on a network.

File Transfer. Trial participants will be able to share text and graphics documents, also collaborate, distribute information and publish documents jointly.

Group IV Fax machines from various manufacturers will be tested by telco employees in normal-day-to-day business.

Conferencing. Shared screen conferences will allow for interactive meetings where one document can be viewed and altered on screen by a number of participants. Joint input of documents produced on personal computers is possible as well.

Automated Answering Position. In this application, a receptionist, using a PC and a terminal adapter, has a standard message form on the screen. They then fill in the information and forward it to the recipient via Envoy 100 electronic mail. In the trial, the Calling Line ID from participants in Calgary and Saint John will allow the receptionist in Ottawa to know who is calling and to provide personalized answering.

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Telelobe Offers Direct Dial Service to 200 Countries

55200017D Toronto *CANADIAN COMMUNICATIONS REPORTS in English Vol 16 No 22, 30 Nov 89 p 6*

[Text] Telelobe Canada has added nine more countries—including the USSR and Iraq—to its international direct dialing service. Of the 222 overseas destinations reached by the carrier's network, only 22 countries now require operator assistance to place a call.

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CYPRUS**Turks Planning Upgrade of Radio, TV Service**

NC1212110789 Nicosia *O FILELEVETHEROS in Greek 9 Dec 89 pp 1,10*

[Report by A. Likavyis]

[Excerpts] The Turks in Cyprus are attempting to upgrade their television, not only with the four channels already in operation (three from Ankara and one belonging to "Bayrak"), but also with:

One: The expansion and technological enhancement of "Bayrak's" installations (and consequently the extension of its range). Cypriot authorities are aware of these plans.

Two: The establishment of new relay units in the occupied territories, both for the complete coverage of the area itself and for the extension of the four channels' range toward neighboring countries.

This is the reason for the presence in the pseudostate of a large group of technicians from Turkey who are studying plans and selecting sites for the new installations, which will supplement those in Kantara which the Cyprus Broadcasting Corporation [CyBC] had built before the invasion.

It is indicative of the Turks' intentions that they will establish a station at the extreme point of Apostolos Andreas from which Israel, Syria, and Lebanon can be easily targeted.

In Nicosia, "Bayrak's" studios have already been considerably expanded, to the point where they are larger than those of the CyBC, whose administration is also fully aware of what is happening and what such an electronic shower on the part of the Turks will mean.

Despite the language barrier, the absence of any channel in the free areas of Cyprus other than the CyBC and the CyBC's limited broadcasting time and offerings (primarily the result of economic factors) means that some viewers are watching Turkish channels, especially for certain programs like live relays of international athletic events and undubbed international films. [passage omitted]

Even more disquieting is a report that, with regular coverage of all Cyprus and the operation of its five modern studios, "Bayrak" is preparing to carry Greek broadcasts on a daily basis. [passage omitted]

FEDERAL REPUBLIC OF GERMANY

Mannesmann Wins Digital Mobile Phone License

Strongest Private Competitor

90WT0023A Duesseldorf HANDELSBLATT in German
8-9 Dec 89 p 16

[Article by agr: "Mobile Telephone: The Choice of Mannesmann Is Interpreted as Regional-Political Signal; 'Strong Small-Business Element'; Schwarz-Schilling: Those Going Away Empty-Handed Will Soon Have New Opportunities With Bundespost"]

[Text] Bonn, 7 Dec—The Mannesmann Mobilfunk consortium will be receiving the license for the D2 digital network, which is expected to include more than two million subscribers in the FRG after 1991. After scrutinizing the 10 applicants, the mobile telephone steering committee decided that the Mannesmann consortium is the "strongest private competitor" for the operator of the D1, the German Bundespost, said Minister for Post & Telecommunications Schwarz-Schilling in Bonn.

Schwarz-Schilling estimated that the investments to be made by all the parties involved for the total system technology will come to between DM2 billion and DM4 billion. The minister emphasized that the license does not constitute a license to "print money," but rather to "spend money." It is expected that the parties involved will not cross the profit threshold until 1995, he said, adding that the Bundespost has no influence on the rate structure. Schwarz-Schilling believes that it will be 1995-96 before the D-mobile telephone network can be used universally.

The Mannesmann Mobilfunk consortium is also the "most capable and best" consortium in terms of industrial policy, the minister said. Because of the participation of credit unions and Raiffaisenbanken [rural credit cooperatives] and of two trade federations, combined with the planned marketing structure—approximately 80 percent of the market is to be served by independent partners—there is a "relatively strong small business element" present. In further licensing negotiations, the minister also wants to make the allocation of fiduciary investment reserves that are still open available to small and medium-sized companies.

In addition, Mannesmann will undergo a restructuring process to change "from a mining company into a service and high-tech enterprise." In terms of industrial policy, the company headquarters in Duesseldorf and its heavy involvement in the Ruhr area were also taken into account in awarding the license, Schwarz-Schilling said.

Moreover, because of its decentralized marketing organization, the company will provide the precondition for distribution of the new jobs created by the second mobile telephone network all across the FRG. More than 80 percent of the jobs should emerge at a total of seven branches, located all over the country. Schwarz-Schilling figures that "during the course of the 1990s" around 3,000 workers will find jobs in D2 operations, around 600 of which will be at the main office.

Schwarz-Schilling admitted that the possibility of combining all three consortia at the top was also discussed by the cabinet on Wednesday. However, this solution failed to gain a majority. The primary argument against it, he said, was that the composition of the consortia themselves was an important evaluation criterion for granting the license.

Critical factors in the evaluation process were professional expertise, productive capacity, and antitrust implications. The Mannesmann consortium reportedly has the necessary "professional expertise," primarily through the involvement of U.S. and British firms, as well as the productive capacity, due in particular to its more than 3,000 available properties for the necessary permanent radio stations, plus its large number of sales partners.

In addition, the minister said, a belated change in the consortia threw the basis of the invitation for bids into question. Furthermore, a reorganization of the top consortia would take a great deal of time and result in a significant competitive disadvantage for the operator of D2, Schwarz-Schilling said.

The minister also rejected the option of regionalizing the license, considering the "equal opportunity competition" between D1 and D2, since the operator of D1, DBP-TELECOM, will be operating nationwide.

The consortia that were passed over this time will have a new chance for further licenses in mobile telephone service as early as next year, the minister said. For 1990,

Schwarz-Schilling announced the international invitation to bid for group telephone networks, such as business phones or taxi radios. Several licenses should be granted for the FRG by mid-1990. A similar schedule is reportedly foreseen for radio call networks, services such as Cityruf or Eurosignal. In addition, licensing bid invitations for the telepoint market are foreseen for early 1990, so that licenses could be issued as early as next fall.

In the digital cellular mobile telephone area, it is conceivable that one or two other operators will be permitted later. However, nothing can be expected for the immediate future following the decision in favor of the Mannesmann consortium, Schwarz-Schilling said.

Mannesmann Consortium

Company	Share (percent)
Mannesmann AG, Duesseldorf	51
Pacific Telesis Netherlands BV, Amsterdam	21
Deutsche Genossenschaftsbank, Frankfurt	10
Cable and Wireless plc, London	5
Lyonnais des Eaux SA, Paris	2.5
Fiduciary reserves*	5.5

Note: 0.5 percent of these shares are to go to each of the Federation of Motor Vehicle Trades and the Federation of German Electrical Trades. The applicant does not specify where the remaining 4.5 percent is to be transferred.

Rau: Big Chance for NRW

90WT0023B Duesseldorf *HANDELSBLATT* in German 15-16 Dec 89 p 17

[Article by Johannes Rau, minister president of North Rhine-Westphalia: Digital Mobile Telephone: a Big Opportunity for Further Economic Development in North Rhine-Westphalia; The Entire Country Profits from the Employment Effect: Important Accomplishment for NRW Technology Policy"]

[Excerpts] The minister for post & telecommunications has decided to award the license for the D2 mobile telephone network to a consortium led by Mannesmann AG, Duesseldorf. Given the strong national and international field of competition, this represents an impressive affirmation of the efficiency, innovative strength, technical competence, and know-how of the firms involved.

At the same time, this decision provides clear evidence of the strength of North Rhine-Westphalia as a site for business, and confirms the appropriateness of the economic and ecological rejuvenation of this industrial area in the heart of Europe, as promoted by the Land government.

The awarding of the license for the billion-mark project to a high-tech company headquartered in North Rhine-Westphalia is a good opportunity to further advance structural change in our Land. Realizing this new digital

communication network involves considerable investments, which can be expected to bring with them a favorable economic impetus and in particular new jobs with a future. [passage omitted]

In the final stage of the digital mobile telephone network, 10 million subscribers all across Europe, including around two million in the FRG, are expected to be hooked up to this network. Experts are counting on an investment of more than DM4 billion through the mid-1990s for setting up and operating the D2 mobile telephone network nationwide. Furthermore, there will be a market for equipment producers, outfitters, and suppliers of car telephones at an order of magnitude that can scarcely be foreseen today.

Big Opportunities for Small and Medium-Sized Companies

I am particularly pleased that small and medium-sized companies have the opportunity to cooperate and develop through their participation in the Mannesmann consortium, by way of the Deutsche Genossenschaftsbank with the organization of the credit unions and Raiffeisenbanken [rural credit cooperatives], and by way of the federations for German electrical and motor vehicle trades. Assembly and expert maintenance of the technical equipment, transmitters, radio towers, and antenna masts all offer future-oriented fields of work with potential for growth.

NRW Is the Economic Center of the FRG

The operating company is counting on a national employment effect from setup and operation of the D2 digital mobile telephone network on the order of approximately 2,500 employees. In addition, the company is assuming that another 10,000 jobs will be created in independent sales and service organizations by the year 2000, and that further positive job effects will be felt in the telecommunications industry.

I am very glad that a North Rhine-Westphalian technology enterprise is leading the way in opening up this future market. This commitment fits in with the technology policy of the Land government, in which information and communication technologies play an important role.

No one who knows our Land's economy can deny that North Rhine-Westphalia is and remains the economic center of the Federal Republic of Germany. It is a Land with ultramodern companies, and it is leading the way on the road to progress. We support future technologies, innovation, and creativity. In the meantime, our Land has also ceased to be simply a Land of coal and steel in the minds of people outside North Rhine-Westphalia, but rather one of the most diverse regions of Europe. Nevertheless, we want to remain a Land of coal and steel. [passage omitted]

Today, North Rhine-Westphalia is also a center for science in Germany and in Europe. Only a few examples

demonstrate this: With 49 universities, technical colleges, and trade schools, and with around 450,000 students, we have a unique college landscape at our disposal. In a recent ranking published by DER SPIEGEL, the North Rhine-Westphalian colleges placed disproportionately high. There are 11 Max-Planck Institutes, five Fraunhofer Institutes—including the successful Institute for Microelectronic Circuits in Duisburg—and three major research institutions located here.

The objectively justified decision to grant the license for the D2 mobile telephone network to the Mannesmann consortium has to do with the fact that we in North Rhine-Westphalia have created an outstanding scientific infrastructure. Anyone who makes this type of investment must be certain that he can find qualified engineers and specialists. I call attention to our Teletech NRW 90 initiative in pursuit of the goal of further improving the preconditions for successfully developing, applying, and disseminating new technologies in North Rhine-Westphalia. [passage omitted]

Net Growth of 6,000 New Startups in NRW

In 1988, the economic growth rate in North Rhine-Westphalia, 3.3 percent, was just under the national average of 3.5 percent. In 1989 as well, real growth will be just over three percent.

In terms of new orders received during the first half of 1989, the manufacturing industry registered an increase of seven percent; the same figure for the capital goods sector was 11 percent. With a positive export balance of 9.6 percent last year and a five-percent increase in industrial production, we even surpassed the national average by a wide margin.

In terms of company startups this year, we have a net growth of 6,000 new startups. For every 1,000 existing companies in North Rhine-Westphalia, there are 31 new startups. This is an important indication that our Land is once again an attractive location. From 1984 to 1989, 303,000 new jobs were created in North Rhine-Westphalia.

FINLAND

Estonians, Finns Establish Direct Phone Lines

90UN0485Z Helsinki HELSINGIN SANOMAT in Finnish 10 Nov 89 p 6

[Article: "Finland and Estonia Getting Direct Phone Lines; New Lines Will Not Eliminate Overloaded Lines"]

[Text] The Post and Telecommunications Office (PTL) hopes to open six direct telephone lines to Estonia this week. So far, only one direct line between Finland and Estonia has been opened, through which area code numbers everywhere in Estonia can, in principle, be reached by dialing.

There have been no direct telephone connections between Finland and Estonia in seven years. The last time lines were in operation was for two years following the 1980 Olympic Games, when calls, of course, went through the Moscow exchange. The Soviet Union cut off direct lines, using an "overhaul" in 1982 as an excuse.

Not all Estonians can call Finland directly since, so far, only about a hundred Estonian firms have been given the chance to do so. Finnish-Estonian joint-venture operations, in particular, are facilitating installation of the lines.

Radio Link Ready To Transmit Calls

Actually, neither one nor six lines will be enough to meet the demand. According to Rauno Alander, the assistant manager of Fintelco, the PTL division responsible for international communications, the PTL is ready to open a sufficient number of lines to Estonia, but there are not enough telephone exchanges in Estonia that can handle direct dialing from abroad.

About 500 calls a day are at present transmitted from Finland to Estonia through operator-assisted exchanges via subscription exchange number 92027, which comprises four lines. The direct-dialing code for Estonia is 990-7-014, after which the city code and the local number are dialed.

A large radio link was established between Finland and Estonia for the Helsinki-Porkkala-Tallinn channel as early as the summer before last. It stands there, however, almost unused because there are no exchanges in Estonia to which channels could be linked.

From Finland there have been direct-dialing lines only to Moscow. According to Alander, there have been preliminary negotiations for direct lines to Leningrad, but the timetable is still open. Like most of the other calls to the Soviet Union, calls to Leningrad still go through subscription exchange 92027.

A service is planned for Viipuri in which business phones would tie directly into the Lappeenranta subscriber network with the aid of a radio link. The purpose of this is to get joint ventures in Viipuri into the Finnish telephone network as—as it were—long-distance subscribers.

Joint-Venture Firms in USSR in Finnish Phone Grid

90WR0036A Helsinki HELSINGIN SANOMAT in Finnish 9 Oct 89 p 7

[Text] The Finnish-Soviet joint-venture firms based in Viipuri will be connected at the beginning of next year to the Finnish telephone network. The Postal and Telecommunications Administration, PTL, entered into an agreement early this week with the Soviet Ministry of Communications to initially connect 40 to 50 Viipuri-based firms to the grid.

The connections from Viipuri to Finland will be routed to Lappeenranta as radio link connections. PTL is also planning to open general cable connections directly from Leningrad to Helsinki.

"The connections to Viipuri are at this time the worst. It is at least possible to reach Tallinn and Leningrad directly through manual connections, but the connections to Viipuri are routed through Leningrad," says Rauno Alander, the superintendent of the PTL department responsible for overseas traffic.

The agreement does not benefit the private telephone user because automatic telephones using Finnish currency will be installed at first only on the premises of companies and in a few hotels.

"Unfortunately, the agreement does not improve the private individual's situation because it will be possible to phone from Finland to Viipuri only on business matters."

PTL also wants to improve connections from Finland to Leningrad, but there will be a wait for that.

"We will aim at connecting Leningrad-based firms to the Viipuri network. Public connections could be improved through a Helsinki-Leningrad cable. We continue to investigate how we can manage to get the connections working, but technical problems in Leningrad are hindering us," tells Alander.

Six New Automatic Lines to Tallinn

By the end of next November, six automatic telephone lines from Finland to Tallinn will be opened up.

"In Tallinn we will try to increase connections as early as the beginning of the year. The Estonians have not had sufficient technical equipment to allow us to increase connections. Our goal is to even triple the number of connections," says Alander.

At this time, automatic connections exist from Finland only to Moscow, where a new central works for overseas traffic will be opening up at the end of next year. The Moscow central also handles calls to several Soviet cities. The badly backed up Leningrad telephone traffic will especially be eased.

Next winter a permanent manual connection will be built between the air traffic controls of Rovaniemi and Murmansk, as Finnair begins scheduled runs between the cities.

"In the past, negotiations were conducted through Moscow. As self-determination rights have increased, we can negotiate directly with the Estonians and the Karelians. Also, the development of the Soviets' own technology is speeding up the creation of working telephone connections," says Alander.

State Agency Hopes To Capture Business Systems Market

90WT0026A Helsinki *HELSINGIN SANOMAT* in Finnish 4 Jan 90 p 17

[News article: "State Telecommunications To Compete for Business Markets in Major Urban Areas—Helsinki Telephone Company: Tele's Organizational Reform Will Not Sway Competition"]

[Text] Tele, the state telecommunications agency, will be competing with local licensed telephone companies to capture a part of the market in southern Finland as a supplier of telecommunications equipment and systems. For this purpose, Tele has reorganized itself, establishing a separate unit to handle sales and service to large customers.

The head sales office for large customers is in Helsinki, with regional offices situated in Tampere, Turku, and Lahti. The 1990 sales goal of the unit has been set at over 100 million markkas.

The National Board of Post and Telecommunications was converted at the beginning of the year to a state-owned business enterprise, and, at the same time, the department responsible for telephone services, formerly PTL-Tele, was renamed Tele.

Besides long distance calls, most local telephone systems in the country are administered by Tele. However, most of the Tele-run districts are situated in the sparsely populated eastern and northern parts of Finland, and Tele's market share in major urban areas has remained quite insignificant.

According to Panu Kostilainen, director of the large customer unit at Tele, the initial effort will be put to promoting complete systems—for example, connecting the switchboard networks of businesses operating in different localities; constructing local systems; establishing data connections; and building private radio networks for businesses.

The organizational rearrangement will not call for additional personnel, but, according to Kostilainen, will instead create a stronger striking force, as formerly scattered expertise from different localities will be concentrated within the unit. It has 200 employees, half of them in installation and maintenance jobs.

In advertising and marketing, the large customer unit will emphasize its international and statewide systems. However, the licensed regional telephone companies have established active cooperation between themselves, offering services that extend to different network areas, while the customers remain subscribers to only one company.

Matti Mattheiszen, general manager of the Helsinki Telephone Company, said that he does not expect the new Tele unit to cause a change in the competitive setup. Rather than being a new activity, the new Tele unit is a

marketing ploy, Mattheiszen commented. The unrestricted selling of terminal data equipment has been possible for a few years, ever since the new law on telecommunications took effect.

The telephone companies Riihimaen Puhelin in the Riihimäki area and Hameen Puhelin, which operates in the Province of Häme, announced their own development plans on Wednesday. They will establish a joint company to concentrate on business telecommunications, in much the same way as the new unit at Tele.

The joint venture by the Hameen Puhelin and Riihimaen Puhelin companies will employ 50 people. The sales goal for the first year has been set at 30 million markkas.

'Ownership Subscriptions' With State-Owned Tele

In spring, Tele will make available in its local service areas basic ownership-type subscriptions similar to those offered by the licensed companies. Until now, the state has offered rental subscriptions only.

The price of a basic subscription will be 4,000 markkas. It can be transferred to another subscriber even though actual ownership is not involved. If a customer gives up his subscription, he will be compensated at current market rates—the monetary value of the subscription, in other words, goes up in the same way as shares in private licensed telephone companies.

Tele wants to join the local telephone companies' system in which it is easy for the customer—for example, in the instance of moving to a new locality—to transfer his telephone subscription. According to Mattheiszen of the Helsinki Telephone Company, local companies are willing to negotiate with Tele in this matter.

At present, the Tele rental subscription costs 800 markkas. It is possible to convert it into a basic subscription by paying an additional 3,200 markkas. The monthly fee for a basic subscription is 24 markkas and that of a rental subscription 43 markkas. Starting in July, the rental subscriber fee will be raised by 4 markkas.

Letters To Be Added to Digits

Next week Tele will distribute to all households a leaflet with a sheet of stick-on labels to promote letters to supplement the numbers on dials.

No new technique is involved in the use of letters. The purpose is to create mnemonic devices that will help to decrease mistakes in dialing. Forming words of the letters is especially suitable for frequently used service numbers.

Tele has a so-called Local Traffic Line that allows the caller to make statewide calls for the price of a local call by first dialing 9800. Tele is advocating the letter alternative for this service.

With the new system, one can make a phone order, for example, for Hasse travels by dialing 9800-HASSE. Connected with every digit of the telephone dial will be a choice of a few letters. H, for example, goes with the digit 4, A with 2, S with 7, and E with 3.

The use of letters on the number dials originated in the United States, where it was introduced in the 1930's. The digit "1" was left without letters because it is the U.S. long-distance digit.

On a Finnish initiative, CEPT, the cooperative unit of the European telecommunications administrations, made a decision last fall to adopt the American system for use in Europe and to incorporate other letters also, such as the Scandinavian ones with umlaut.

The stick-on labels to be distributed by Tele are intended for attaching on telephone machines and other surfaces for reference. Telephones with letters on the dials will be available for sale shortly.

Customers can freely choose their telephone numbers for the Local Traffic Line, thus enabling them to pick suitable, easy-to-remember words. In principle, such words can be used for ordinary telephone numbers as well. However, there are many restrictions involved in this, since all telephone numbers within a certain area have the same beginning digits.

Phone Equipment Ordered from Denmark's Alcatel Kirk

90WT/933A Copenhagen BERLINGSKE TIDENDE in Danish 6 Jan 90 p 22

[Text] The Alcatel Kirk telephone manufacturing firm located in Horsens has received a contract from Finnish companies for delivery of 65,000 units. This order is worth 25 million kroner.

The Finnish phone market with its some 50 local telephone companies is normally difficult to penetrate by foreign firms. Nevertheless, the Horsens firm of Alcatel Kirk—the former Kirk—has succeeded in obtaining an order from the Finnish companies. This will mean that the delivery of 65,000 telephones, with a total value of 25 million kroner, will start already this year.

"It will mainly be the phone models Kirk Plus and Kirk Delta, as well as the traditional Comet sets, which will be delivered. We expect to have about 20 percent of the market in Finland," stated John Holck of Alcatel Kirk. The firm has previously sold some Comet models in Finland.

The contract was obtained largely because a subsidiary of Alcatel in Finland is well linked into that country's into that country's distribution network, which is the most important factor in a country with so many local phone companies.

Holck expects Alcatel Kirk to double its telephone exports next year, and that it will be able to accomplish

this without losing its market share at home. The company's production capacity lies somewhere around 50,000 units per month.

Testing of Cordless Digital Pocket Phone

90WR0036B Helsinki HELSINGIN SANOMAT in Finnish 4 Oct 89 p 21

[Article: "Cordless CT-2 Aims at Being the First Everyman's Pocket Telephone"]

[Text] The Helsinki Telephone Works on Tuesday introduced the new cordless pocket telephone CT-2, which is in trial use in the core business district of Helsinki. Telephone calls are made with the CT-2 apparatus through a special telepoint power station, of which there are now five.

The displaying of the CT-2 was intended to support the opening of a company service store set up in the Wulff building by HPY [Helsinki Telephone Works]. One of the telepoint stations is in the same HPY store. When placing a call, the cordless pocket telephone must be within a couple of hundred meters' radius from the telepoint power station, which is connected to the normal fixed telephone grid. Therefore, there is no question about a separate grid comparable to that of the NMT telephone.

Not Yet Possible To Place a Call to a CT-2 Pocket Telephone

The city of Helsinki is experimenting, as a "pilot user," with about 20 telephones along the Railroad Station-Mannerheimintie-Market Square route. HPY will next place telepoint stations in business centers such as Tapiola, and at railroad stations. Also, Postal and Teleworks has considered the opening up of experimental grids.

At present, CT-2 is in outdoor use but cannot accept calls. The marketing of power stations, which are suitable for home and office use, will begin by next spring. Through them it will be possible to place calls in both directions.

The new product differs in several ways from the earlier systems. It is no longer as much a "shoe" telephone as a "sole" telephone; the receiver weighs only 130 grams.

The exact price is not known because the item is not yet for sale on the shelf. The pocket telephone will cost about 2,000 marks. In London the apparatus costs £200, and the power station an equal amount.

CT-2 is a digital phone, whereas the earlier cordless phones were analog phones. The same radio frequency is used for both sending and receiving, which halves the required components and power use.

Helsinki Will Experiment Right After London

Corresponding experimentation was started in London in August. In both cases the manufacturer of the equipment is British Shaye Communications, of which Nokia

owns one-fourth. The Federal Republic of Germany, France, and Spain are next in line to put the digital system into use.

"This will become a mass product. There are, after all, two and a half million telephone jacks in Finland," says director Matti Carpen.

"In a few years there will be tens of thousands of these," guesses Jukka Alho.

It is estimated that 100,000 CT-2 telephones will be sold in England next year. By the mid-1990's, over 2 million people are expected to be using the cordless telephone throughout Europe.

The development of the product will continue so that in the next versions the products of various manufacturers will be more compatible. The version in use in Finland now requires different connections from the English one. The cordless telephone following CT-2 is called Dect, and its capacity will be greater than that of its predecessor.

FRANCE

Ariane Launch Postponed Over Technical Problem

LD0501211790 Paris Domestic Service in French 1800 GMT 5 Jan 90

[Text] The upcoming launch of the Ariane rocket has been postponed. An anomaly in the information provided by a gyroscope of the inertial center of the rocket made it necessary for engineers to halt the countdown. This center is Ariane's brain. No new launch date has yet been given. Ariane was to have taken off on 10 January with the Spot observation satellite aboard.

Alcatel-Aerospatiale Agreement Creates Large Unit

90WT0017A Paris LES ECHOS in French 22 Nov 89 p 12

[Article by Blandine Hennion: "Government Go-Ahead for Alcatel-Aerospatiale Merger; first paragraph is LES ECHOS introduction]

[Excerpts] Industrial pragmatism has won out over political considerations. Long blocked by the freeze of the Framatome case, the Alcatel-Aerospatiale agreement will beget the world's second-largest satellite company.

Alcatel-Space, the private payload manufacturer, and Aerospatiale, the public-sector platform manufacturer, are going to merge their activities to become the world's number-two satellite company. Sales of 3 billion French francs this year will place behind the American company Hughes (7 billion francs).

Industrial pragmatism finally won out over political considerations. The government gave Aerospatiale its

go-ahead yesterday, allowing the public group to negotiate with Alcatel "the conditions under which they will merge, on an equal basis, their satellite activities." The return to normal of relations between the government and the CGE, being handled by Pierre Suard (see LES ECHOS of 27 September), will thus be accomplished in two steps, without waiting for the readjustment of Framatome's profit-sharing/worker co-management scheme. The latter case is today considered "on hold."

Paul Quiles, minister in charge of space, waged a discreet battle with the government to "decouple" the two dossiers [passage omitted]. "We are transforming case-by-case cooperation into a real, long-term 50/50 partnership," Aerospatiale was pleased to announce yesterday.

The two companies, which complement each other, employ 1,300 people each in satellite divisions and expect total sales of 4 billion French francs next year, have, in fact, often submitted bids together in international bid invitations.

No Manufacturer Named

Moreover, they are linked in the Franco-German consortium Eurosatellite, which has built all the heavy, European live-television satellites (TDF 1 and 2, TV Sat 1 and 2, and Tele X). Alcatel and Aerospatiale are again submitting together for the Turksat and Inmarsat bid invitations underway. [passage omitted]

Aerospatiale still has a 6-percent ticket in the German company MBB, after the group's last capital increase. MBB is Aerospatiale's long-standing partner, with whom the French group shares a "joint platform" in the satellite field.

It is a considerable asset for the future of Franco-French mergers, which cannot survive long without foreign partners. Especially since MATRA, the other French satellite manufacturer which will not finalize its agreement with Marconi Space Systems for another few weeks (See LES ECHOS 2 October)—the delay is due notably to the choice of headquarters in the Netherlands—is also making eyes at the giant Daimler-Benz-MBB, member of its core group.

Satellite Beacon for 'Exclusively Civilian' Use

AU1201083290 Paris AFP in English 0249 GMT 12 Jan 90

[Text] Paris, Jan 12 (AFP)—The French Government has assured New Zealand that a satellite-tracking beacon installed two years ago on a remote New Zealand island was for "exclusively civilian" use, authoritative sources said Thursday.

The beacon, set up in the Chatham Islands some 800 kilometers (500 miles) east of Wellington, was the focus of controversy this week as New Zealand opposition parties claimed it might be used for targeting nuclear missiles.

France has delivered "all the explanations legitimately requested by the New Zealand authorities, assuring the exclusively civilian nature" of the beacon, the sources added.

"There is no dispute between New Zealand and French authorities over the installation of the beacon," the sources said.

The installation followed an agreement between the French National Center for Space Studies (CNES) and New Zealand Telecom, formerly New Zealand Post.

The French and New Zealand governments are keeping in contact and hope to get the satellite beacon into service, the sources said. Except for a brief testing period, the beacon has been inactive since its installation in 1988.

The system, a brainchild of the CNES and two other French research groups, is meant to locate satellites in orbit.

AFP Buys 1,000 Satellite Receiver Units

AU1501181490 Paris AFP in English 1713 GMT 15 Jan 90

[Text] Bonn, Jan 15 (AFP)—AGENCE FRANCE-PRESSE (AFP) has ordered a thousand satellite receiver units from a Franco-German consortium to boost its European services, the news agency announced here Monday. The contract with a consortium formed by Matra Espace of France and West Germany's Fuba is worth some 30 million francs (about five million dollars), AFP president Jean-Louis Guillaud told journalists here.

The receivers will be supplied over three years, with the first deliveries in May this year, giving AFP about 1,200 satellite receiver stations installed at its customers' offices by 1991, compared to about 400 today. Satellite receivers give customers around the globe excellent quality reception of AFP news and photographs regardless of local conditions. They were initially designed for customers in remote locations as an alternative to expensive land line transmission. But they are now to come into general use in Europe and even within capital cities, as the cost of receiver stations has fallen sharply thanks to the high volume of orders, Mr. Guillaud said.

AFP news and pictures are broadcast by PolyCom, a 50-50 joint venture of AFP and France Telecom, using several communications satellites.

The new satellite receiver units have a small-diameter antenna measuring 55 or 85 centimetres, with a 64 Kbit receiver.

GREECE

Fiber Optics Cable to Greece, Other Developments

NC2812141389 Nicosia O FILELEVTHEROS in Greek
28 Dec 89 p 20

[Excerpt] The Cyprus Telecommunications Authority [CYTA] and the Cyprus Broadcasting Corporation [CyBC] will soon lay a very large fiber optics cable which will offer unlimited possibilities for continuous transmission of television programs from Greece or a direct linkup with Greek television each day. This is in addition to the possibilities being created in the telecommunications field.

CYTA and CyBC have almost reached an agreement regarding this cable and are proceeding with a unified plan to lay it in the Mediterranean as soon as possible.

At the same time, CYTA is going ahead with modernization of the Atlantic antenna—the satellite antenna which receives signals from the Atlantic satellite—to function with the digital system and be capable of offering more facilities to its subscribers.

A special feature of CYTA's modern new equipment is the introduction of the revolutionary technology of "terminals," which are now being used in Europe.

With this "terminal," one can have a simultaneous telephone, telex, and telefax link as well as any other service offered domestically or abroad. That means that one will have everything in one device.

It has already been stressed that tenders have been issued to computerize all of CYTA's services, a step which is the forerunner of more services to follow.

A CYTA spokesman informs us that as of 28 February, all telephone numbers in Cyprus will have six numbers. [passage omitted]

First Private TV Channel Starts Broadcasting

90WT0015A Athens KIRIAKATIKI
ELEVTHEROTIPIA in Greek 28-29 Oct 89 p 38

[Excerpts] It has a quality program, rich and entertaining. The information is complete, but not tiring. There is a contribution to education and culture. The sports broadcasts are fully satisfying. There are many films and made-for-TV movies. It is a television program for all ages with a contemporary concept of operation.

These are the format and the fundamental characteristics of MEGA CHANNEL, the first private television channel in Greece that will begin broadcasting at 1500 on 20 November in metropolitan Athens and in the Salonica area at a later date. [passage omitted]

The MEGA CHANNEL programs will begin every day at 1500 and end at 0100, except on Fridays, Saturdays and Sundays when they will begin at 1330 and end at

0200. The programs will be divided according to the ages and special interests of the viewers.

The news will be broadcast in a 5-minute newscast at 1800, a 1-minute news brief at 1900, a long, 30-minute newscast at 2030, a 1-minute news brief at 2200 and a 5-minute newscast at 2400 as well as other special political and special interest broadcasts during the week.

ITALY

Construction of New Hipparcos To Be Requested

90WT0018A Rome AVIAZIONE in Italian Oct 89 p 532

[Article by A.B.]

[Text] Inasmuch as Hipparcos is in danger of becoming lost in space, Italy plans to suggest to the Science Program Committee of the European Space Agency [ESA] that a second European astrometric satellite be built. As is known, Hipparcos is located in an orbit which does not permit its total utilization because of a failure to start its motor which would have placed it in the geostationary orbit previously planned.

"We would like to develop a Hipparcos 2 within the scope of ESA's obligatory scientific programs," said Senator Learco Saporito, undersecretary of the Department of Scientific Research, at a press conference held in Rome. Saporito also stated that, before honoring Italy's request (which would very probably be supported by France), we should await the results of the ESA committee investigation which should explain why Hipparcos' apogean motor failed to start.

"Optimism is out of the question," said Prof Ernesto Vallerani, head of the Aeritalia Space Group. "The probability of recovering Hipparcos is virtually zero, but the ESA technicians will continue to 'interrogate' the satellite in the hope of understanding the causes and problems which led to the malfunction of the propelling mechanism." However, with regard to the construction of the second Hipparcos unit, Vallerani said that the next European astrometric satellite could be launched within 2 or 3 years. According to estimates submitted by Aeritalia and Matra, the cost of Hipparcos 2 would come to about 350 billion lire, equivalent to 35 percent of the expenditures already made for the construction of Hipparcos 1.

Speaking on behalf of SNIA Bpd [Italian-American Shipping Co.], engineer Michele Grande stated that until now 18 motors of the "MAGE-2" type have been built in cooperation with France's SEP [European Propellant Co.] and that all functioned very well under close terrestrial inspection. "Naturally," Grande added, "the operating conditions in space are quite different from those encountered during terrestrial testing, but until now we have had no cause to doubt the reliability of the MAGE-2. This motor," Grande went on to say, "will be installed on the Lageos satellite and the IRIS orbital transfer

system." The need to construct a second Hipparcos was also supported by Prof Luciano Guerriero, president of the Italian Space Agency (ASI). "This satellite," Prof Guerriero explained, "was constructed for the purpose of measuring the stellar population in our immediate vicinity, thus permitting us to extrapolate important data regarding the dimensions of the universe. In fact, it was calculated that Hipparcos could furnish us information on at least 400,000 stars and that this information would then be combined with the optical observations carried out by the space telescope which NASA would be launching in the near future with the shuttle." Moreover, there is a very real possibility that the astrophysicists, astronomers, and researchers who have worked on the program for 15 years could see their extensive efforts come to naught. Prof Bernacchi himself, head of ESA's Italian scientific team working on the Hipparcos program, spoke glowingly of the outstanding effort made by the Italian scientific community on the European space undertaking.

"There are 26 Italian astronomers and astrophysicists who have succeeded in obtaining a special preview of the scientific data furnished by Hipparcos during its observations and measurements. In fact," Prof Bernacchi continued, "there are many institutions, research groups of the CNR [National Research Council], and universities which participate in the Hipparcos scientific program. For example, the Astronomical Observatory of Pino Torinese, which had already made available its optical telescope for astronomy (the only one of its kind in Italy), has now offered a data base service which is unique by European standards. It is therefore necessary," Bernacchi concluded, "to establish a second Hipparcos mission in order not to nullify all the work performed by Italy in keeping with the Foundation for Astronomical Space Technology (FAST), which anticipates that Italy's participation will be the equivalent of 40 percent of the European researchers who worked on the Hipparcos program.

Moreover, in addition to the impossibility of starting the satellite's apogean motor, it is also futile to think about its recovery by the space shuttle because of the difference in the orbital speed of the two celestial bodies. The only solution, therefore, is to develop a second version of the Hipparcos which could be put into orbit sometime in 1993.

PORTUGAL

Integrated Digital Network Brings Improvements

90WT0020A Lisbon SEMANARIO ECONOMIA in Portuguese 25 Nov 89 p 12

[Article by Joao Belo]

[Excerpt] By the end of 1991 the essential telecommunications services will be using the telephonic network. This will be the result of the digitalization of the telephones.

Within 2 years, as already indicated, the TLP [Lisbon and Porto Telephone Network] will launch the commercial

application of the Integrated Digital Network Services (RDIS), according to information given to SEMANARIO by Euclides Sousa, commercial director of that firm.

The installation of the RDIS in Portugal means that the user will have access to all telecommunications services through a single outlet, thus obviating the current need to resort to separate networks for the various services: the transmission of texts by telex, voice contact by telephone, the sending of information by telepac, etc.

The dates for the installation of the RDIS in Portugal are still under discussion due to an international agreement which involves all European telecommunications operators. The objective at the European level is to set standards for launching and commercializing the program and determining the extent of the operation itself.

Meanwhile, the program which will serve to introduce TLP's RDIS system in Portugal will begin early in 1991. Prior to that time, in 1990, TLP will give demonstrations of the system at various companies in order to publicize the new development. At the same time, an RDIS demonstration center will be set up in both Lisbon and Porto to let the public see how all of the networks involved can function from a single outlet.

The RDIS, which is emerging as a normal result of the digitalization of the national telephonic network, is using the potentialities of digitalization itself, and this will involve an investment by TLP for the first phase, 1991/1992, of about 1.8 million contos. The most relevant elements of the investment are those involving the network's software and promotion of the system itself.

New Transmitter for Africa Inaugurated

LD0612173389 Lisbon International Service in Portuguese 1200 GMT 6 Dec 89

[Summary] A new 300kw transmitter for Africa is being officially inaugurated today as well as a new antenna at RDP [Lisbon radio] International's short-wave broadcasting center in Pegoes.

The ceremony is being attended by [words indistinct], assistant to the prime minister, minister of youth Couto dos Santos, secretary of state assistant to the minister of youth and social communication Albino Soares, RDP chairman Eng Cardoso Meneses, and members of RDP's management.

UNITED KINGDOM

Full ISDN To Begin in April in UK

90AN0099 Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 27 Nov 89 pp 4-5

[Article: "BT Leads the Way in Basic Rate ISDN Services"]

[Excerpt] British Telecom has finally announced the start of its basic rate ISDN service. Known as ISDN 2, the service will commence as a "test market" at the end of November with full commercial service "rolling out" from the end of April 1990. Equipment for the upgrading of System X exchanges has been ordered from STC Telecommunications at a cost of 23 million pounds. This will provide 90,000 basic rate ISDN lines each with two 64 Kbit/s 'B' channels and a single 16 Kbit/s 'D' channel.

The 90,000-line rollout will be phased over an eighteen-month period, according to Nick Kane, BT's Director of Marketing and Sales. "This will enable us to offer ISDN 2 facilities from all our 2,000 system X exchanges," he said, adding: "The service will also be made available on Ericsson AXE-10 exchanges in the network in the near future."

Kane also claims that the new BT ISDN offering is "the first in the world to conform to the latest international standard—CCITT 1420." It will support standard ISDN supplementary services defined by CCITT [Consultative Committee of International Telephone and Telegraph], including calling party identification—but only where the connection is end-to-end digital—and virtual private networks. Tariffs for connection and line rental will be announced next year, Kane says. "Initially these will be at a premium compared to charges for ordinary analogue exchange lines," he adds. Inland call charges will be the same as for current use of the analogue PSTN.

Now Kane is looking forward to the launch of terminal equipment that will allow users to make full use of the ISDN 2 service.

Initially, these are likely to take the form of add-in cards for conventional personal computers. This is the route favoured in France, where the rapid rollout of the Numeris system to cover the whole of the country between January and December 1989 has encouraged a proliferation of such cards from nearly a dozen suppliers.

In the UK, STC subsidiary ICL was the first to make an offering with the launch two days after BT's announcement of its ISDN workstation and desk-to-desk teleconferencing application.

The workstation is based on either an ICL DRS intelligent workstation or PC/AT286/386 machine. DeskTop Conferencing allows users who are potentially hundreds of miles apart to communicate by telephone and simultaneously view, amend, or annotate identical screens of information by keyboard or light pen. ICL believes that, within five years, DeskTop Conferencing will be the norm for business users.

Rival Mercury Communications says that it plans to introduce basic rate ISDN services "sometime next year." In the meantime, though, it has introduced a new signalling option that will allow it to offer some of the

benefits of ISDN primary rate access—notably the multiplexing of 30 exchange lines into a single cable—to customers currently served by its Northern Telecom DMS switch. The North American-designed NT exchanges are not compatible with European standard ISDN signalling, so Mercury is currently only able to provide full ISDN facilities to customers with direct access to its eleven System X switches. [passage omitted]

French Proposal Threatened UK Telecom Companies

55500021 London THE DAILY TELEGRAPH in English 6 Nov 89 p 25

[Article by Boris Johnson in Brussels]

[Excerpt] Up to 600 British data service companies could be forced out of business if France is successful in pushing through restrictive EEC measures on telecommunications, the government warned yesterday.

Britain is for once united with the European Commission in fighting for the liberalisation of the EEC telecommunications market—an area singled out by Mrs Thatcher as one where other Common Market countries have much to learn from Britain's example.

The French are lobbying hard to protect their highly-regulated public telecommunications monopoly from the free market of 1992 by insisting that any liberalisation is accompanied by a cluster of new rules.

The commission plan means that owners of telecommunications infrastructure—from telephone lines to satellites—would be obliged to open it to free competition among those who want to provide a commercial service.

The British Commissioner, Sir Leon Brittan, has infuriated all Common Market countries, except Britain, by invoking the little-used Article 90 of the Treaty of Rome which empowers the commission to lay down the law in competition policy without discussion among EEC governments.

The French have fought back by using their presidency of the Council of Ministers to table strict conditions under which private firms would be allowed access to the networks.

These conditions, known as open network provision, or ONP, would require all newcomers to provide services on the same terms as public concerns.

British officials said Britain's growing market in packet-switching could be jeopardised by the French proposals, which have strong support from six other countries. "If the ONP poses a heavy regulatory burden on a small company, it could put that company out of business," a spokesman said.

[Passage omitted]

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